CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 88-042

SITE CLEANUP REQUIREMENTS FOR:

AMPEX CORPORATION
AND
TANDEM COMPUTERS INCORPORATED

10435 NORTH TANTAU AVENUE FACILITY
CUPERTINO, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. Ampex Corporation leased the facility at 10435 North Tantau Avenue from 1974 to 1986. Ampex vacated the property in 1986 when the facility was sold to Tandem Computers Incorporated, the current owner and operator of the property. Both parties are named as dischargers; however, Tandem Computers Incorporated will have responsibilities for investigation and cleanup only in the event that Ampex Corporation fails to comply with the investigation and cleanup provisions of the Order.

2. While occupying the site, Ampex used the facility to design and manufacture cameras. Chemical solutions used in the production operation, including degreasers, lacquer thinners, and isopropyl alcohol, were stored in 55-gallon drums in an asphalt-bermed area located in the rear of the facility. No underground storage tanks have been installed at the site.

3. Site investigations indicate that the soil beneath the former drum storage area and maintenance shed area to be contaminated with tetrachloroethylene (PCE), trichloroethylene (TCE), trans-1,2-dichloroethylene (TDCE), and Freon 113. Chemical analyses of soil samples indicate that PCE is the primary constituent beneath the former drum storage area where concentrations ranged from 0.03 parts per million (ppm) to 25 ppm. TCE is the primary constituent detected in the soil beneath the maintenance shed area where concentrations ranged from 0.01 ppm to 13 ppm.

4. The principal contaminants, TCE and PCE, were detected only in the top 50 feet of soil; these contaminants were not detected in the first water-yielding zone in both on-site wells. Freon 113 was also detected in the top 50

feet, but at very low concentrations (0.06 ppm). Although Freon 113 was found in the groundwater (16 parts per billion, ppb) at the 100 foot depth, the Freon appears to have originated principally if not exclusively from an up-gradient source. In addition, this concentration is substantially lower than the Department of Health Services action level of 18,000 ppb.

5. Cleanup actions to date include the excavation of 300 cubic yards of soil and treatment of the excavated soil by aeration with periodic turning for three months. Approximately 200 cubic yards of the aerated soil was hauled off-site and 100 cubic yards used as backfill in the former drum storage area. Analyses of samples collected from the soil used for backfill indicated average concentrations of 0.03 ppm for TCE and 0.035 ppm for PCE. Since more than one month of relatively warm and dry weather conditions elapsed between sampling and backfilling operations, the actual concentrations of PCE and TCE were probably lower because of continued aeration.

6. Ampex proposed, in a Final Remedial Action Plan dated December 14, 1987, to remove an additional 111 cubic yards of deeper TCE-contaminated soil in the maintenance shed area as a final remedial measure. Ampex estimates that combined with previous soil removal actions, this alternative will result in an average TCE concentration of approximately 0.168 ppm remaining in the shed area.

7. The excavation of an additional 13 cubic yards of soil in the vicinity of boring S-18 would remove nearly all of the soil contaminated with TCE at concentrations greater than 0.5 ppm at the site. A groundwater monitoring program would verify that the remaining contaminants do not migrate downward to affect water quality.

8. Ampex believes that the proposed alternative would provide the optimum combination of public health and environmental protection, cost-effectiveness, and technical feasibility.

9. An acceptable final remedial action plan would include, in addition to the soil removal proposed by Ampex, the removal of approximately 13 cubic yards of TCE-contaminated soil in the vicinity of boring S-18 and the implementation of a groundwater monitoring program.

10. The additional soil excavation work described in Finding 9 would achieve, along with previous cleanup actions at the site, the removal of most of the soil contaminated with PCE and TCE at concentrations greater than 0.4 ppm and 0.5 ppm. The cleanup objectives of 0.4 ppm for PCE and 0.5 ppm for TCE is intended to maximize the amount of soil contamination removed without incurring unduly high costs.

A more stringent cleanup objective, such as the removal of all contamination above detection limits, would result in nearly ten times the cost without a corresponding large reduction in risks to water quality. Furthermore, the maximum depth of polluted soil (50 feet below ground surface) versus the depth to the first water-bearing zone (100 feet) indicates that, after final cleanup actions, there is little potential for future beneficial uses of groundwater to be affected at the site.

11. The Board finds that the plan outlined in Finding 9 is expected to minimize the threat of degradation of groundwater quality. Any minimal degradation that might occur is not likely to affect present or anticipated beneficial uses or to result in concentrations greater than drinking water standards or Department of Health Services Action Levels. Further measures to remove additional contaminants would require significant additional expenditures with only small improvements in the degree of protection provided. Such expenditures are not consistent with the maximum benefit to the people of the State. Therefore, the proposed plan is consistent with State Water Resources Control Board Resolution No. 68-16, "Statement of Policy With Respect To Maintaining High Quality of Waters in California."

12. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986. The Basin Plan contains water quality objectives and beneficial uses for South San Francisco Bay and contiguous surface and groundwaters.

13. The existing and potential beneficial uses of the groundwater underlying and adjacent to the facility include:

    a. Industrial process water supply
    b. Industrial service water supply
    c. Municipal and Domestic water supply
    d. Agricultural water supply

14. The discharger(s) has caused or permitted, and threatens to cause or permit waste to be discharged or deposited where it is or probably will be discharged to waters of the State and creates or threatens to create a condition of pollution or nuisance.

15. This action is an order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the California Environmental Quality Act, CEQA, pursuant to Section 15321 of the Resources Agency Guidelines.

16. This Order establishes a schedule and cleanup standards for the removal of deep contaminated soils. The effectiveness of protecting water quality by the soil cleanup actions needs to be evaluated by a program of groundwater monitoring from two existing monitoring wells. The need for any possible additional cleanup can be assessed based on the results of the monitoring program.

17. The Board has notified the dischargers and interested agencies and persons of its intent under California Water Code Section 13304 to prescribe Site Cleanup Requirements for the dischargers and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.

18. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the dischargers shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of the waters of the State is prohibited.

2. Further significant migration of pollutants through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of pollutants are prohibited.

B. SPECIFICATIONS

1. The storage, handling, treatment or disposal of soil or groundwater containing pollutants shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

2. Monitoring activities shall be conducted as needed to define the current local hydrogeologic conditions, and the lateral and vertical extent of soil and groundwater pollution. Should monitoring results show evidence of pollutant migration, additional characterization of the extent of the pollution shall be required.

C. PROVISIONS

1. The dischargers shall comply with Prohibition A.1., Specification B.1., and Provisions 12 and 14.

2. Ampex Corporation shall comply with Prohibitions A.2. and A.3., Specification B.2., and Provisions 2 through 11. Within 60 days of the Executive Officer's determination and actual notice to Tandem Computers Incorporated that Ampex Corporation has failed to comply with the portion of the Order specified in this paragraph, Tandem Computers Incorporated shall comply with all requirements of this Order. Ampex shall comply with the above requirements in accordance with the following time schedule and tasks:

COMPLETION DATE/TASK:

a. 1) COMPLETION DATE: April 6, 1988

TASK: SOIL EXCAVATION DEFINITION: Submit a technical report acceptable to the Executive Officer containing a revised proposal for soil excavation and diagrams defining the limits of excavation needed to remove soils polluted with TCE as described by Finding 9.

2) COMPLETION DATE: September 15, 1988

TASK: COMPLETION OF FINAL REMEDIAL ACTIONS: Submit a technical report acceptable to the Executive Officer which evaluates and documents the removal and disposal of polluted soils as described in the Final Remedial Action Plan and in the technical report submitted for Task 2.a.1).

b. COMPLETION DATE: September 15, 1988

TASK: SAMPLING OF GROUNDWATER MONITORING WELLS: Submit a technical report acceptable to the Executive Officer describing sampling procedures and containing sampling results from groundwater monitoring wells as summarized in Table 1 of the self-monitoring program.

Sampling reports shall be submitted annually thereafter until September 15, 1992 at which time the monitoring schedule may be revised.

c. COMPLETION DATE: March 15, 1993

TASK: SAMPLING PROGRAM SUMMARY: Submit a technical report acceptable to the Executive Officer containing a final sampling report for the site which includes a summary of all sampling results including sampling dates, analytical methods and copies of all laboratory reports.

This report shall also include an evaluation of whether additional remedial measures and/or monitoring is necessary and recommend any additional measures for final cleanup if needed. This recommendation will be reviewed by Regional Board staff and the Regional Board will determine if the recommended plan is acceptable.

3. Ampex shall submit to the Board acceptable technical reports on self-monitoring work performed according to a program prescribed by the Board's Executive Officer.

4. If Ampex is delayed, interrupted or prevented from meeting one or more of the completion dates specified in this Order, Ampex shall promptly notify the Executive Officer. In the event of such delays, the Board may consider modification of the task completion dates established in this Order.

5. Ampex shall identify any obstacles which may threaten compliance with the schedule of this Order and what actions are being taken to overcome these obstacles. In the event of non-compliance with Provision C.3. or any other Specification or Provision of this Order, written notification which clarifies the reasons for non-compliance and which proposes specific measures and a schedule to achieve compliance shall be submitted. This written notification shall identify work not completed that was projected for completion, and shall identify the impact of non-compliance on achieving compliance with the remaining requirements of this Order.

6. Annual reports submitted in September shall include, but need not be limited to, appropriately scaled and detailed base maps showing the location of both monitoring wells and identifying adjacent facilities and structures, tables containing water level measurements and well construction information.

7. All hydrogeological plans, specifications, reports, and documents shall be signed by or stamped with the

seal of a registered geologist, engineering geologist or professional engineer.

8. All samples shall be analyzed by State certified laboratories using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Board review.

9. Any facility or control system installed to achieve compliance with the requirements of this Order shall be maintained in good working order and operated as efficiently as possible.

10. Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order, shall be provided to the following agencies:

    a. Santa Clara Valley Water District
    b. Santa Clara County Health Department
    c. City of Cupertino
    d. State Department of Health Services/TSCD

11. The Executive Officer may additionally require copies of correspondence, reports and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order to be provided to the U.S. Environmental Protection Agency, Region IX, and to a local repository for public use.

12. The Board or its authorized representative shall be permitted, in accordance with Section 13267(c) of the California Water Code:

    a. Entry upon premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

    b. Access to copy any records required to be kept under the terms and conditions of this Order.

    c. Inspection of any monitoring equipment or methodology implemented in response to this Order.

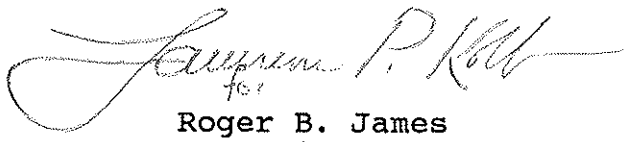
    d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger(s).

13. Tandem Computers Incorporated shall file a report on any changes in site occupancy and ownership associated with the facility described in this Order.

14. If, during the dischargers' respective operations, any hazardous substance is discharged in or on any waters of the state, or discharged and deposited where it is, or probably will be discharged in or on any waters of the state, the dischargers shall report such discharge to this Regional Board, at (415) 464-1255 on weekdays during office hours from 8 a.m. to 5 p.m., and to the Office of Emergency Services at (800) 852-7550 during non-office hours. A written report shall be filed with the Regional Board within five (5) working days and shall contain information relative to: the nature of waste or pollutant; quantity involved; duration of incident; cause of spill; Spill Prevention, Control, and Countermeasure Plan (SPCC) in effect, if any; estimated size of affected area; nature of effects; corrective measures that have been taken or planned; and a schedule of these activities, and persons/ agencies notified.

15. The Board will review this Order periodically and may revise the requirements when necessary.

I, Roger B. James, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on March 16, 1988.



Roger B. James
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

Ampex Corporation
and
Tandem Computers Incorporated

10435 North Tantau Avenue Facility
Cupertino, Santa Clara County

SITE CLEANUP REQUIREMENTS ORDER NO. 88-042

CONSISTS OF

PART A, Dec. 1986
As Modified by South Bay Toxics Division, 1/23/87
With Appendices A-E

and

PART B, adopted March 16, 1988

PART B

AMPEX CORPORATION
AND
TANDEM COMPUTERS INCORPORATED

10435 NORTH TANTAU AVENUE FACILITY
CUPERTINO, SANTA CLARA COUNTY

I. DESCRIPTION OF SAMPLING STATIONS

GROUNDWATER

Station	Description
Wells W-1 and W-2	Wells screened in the first water-yielding zone(s).

II. MISCELLANEOUS REPORTING

None.

III. SCHEDULE OF SAMPLING AND ANALYSIS

The schedule of sampling and analysis shall be that given in Table I (attached).

IV. MODIFICATIONS TO PART A

All items of Self Monitoring Program Part A, dated December 1986 and as modified January 23, 1987 shall be complied with except for the following modifications:

A. Delete Sections D, E, F.2, G.2, G.4.b, G.4.e, and G.4.g, G.5.

B. The first paragraph of Section G.4 shall be changed to read as follows:

> "Written reports shall be filed with the Regional Board annually and filed no later than September 15. The reports shall be comprised of the following:"

C. Insert G.4.d.5) to read as follows:

> "5) The EPA method 8240 analyses shall include tentative identification and semi-quantified concentrations of non-priority

pollutant substances of greatest apparent concentration, to be followed by identification and confirmation of peaks of greatest apparent concentration."

I, Roger B. James, Executive Officer, do hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with Site Cleanup Requirements established in Regional Board Order No. 88-042.

2. Was adopted by the Board on March 16, 1988.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer or Regional Board.

for
ROGER B. JAMES
EXECUTIVE OFFICER

Attachment: Table 1

TABLE 1

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSES

SAMPLING STATIONS	Groundwater Monitoring Wells W-1 and W-2
TYPE OF SAMPLE	Grab
EPA Method 8010 for purgeable priority pollutants including Freon 113	Annually
EPA Method 8240 and non-priority pollutant scan *	Every 4 Years
Water levels	Annually

* The first set of sample results using this method will be submitted in September 1988. EPA Method 8010 analysis is unnecessary when analyzing samples using EPA Method 8240.